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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,416	09/30/2003	Jui -Mei Hsu	CMOP0024USA	2415

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NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
P.O. BOX 506
MERRIFIELD, VA 22116

EXAMINER


NGUYEN, THANH NHAN P

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 11/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/605,416	Applicant(s) HSU, JUI -MEI	
	Examiner (Nancy) Thanh-Nhan P. Nguyen	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20 and 22-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20 and 22-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This communication is responsive to the RCE dated 11/9/2005.
2. Claims 1-19 & 21 have been cancelled; claims 30-39 have been newly added. Accordingly, claims 20 & 22-39 are pending for the examination.

Claim Objections

Claims 29 & 39 are objected to because of the following informalities: claims 29 & 39 currently read as, "... the thin film transistors is formed..." It appears it should have read as, "... the thin film transistors are formed..." Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 30 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 30 is about the liquid crystal display comprising a color filter on the upper substrate, wherein a surface of each color filter has a plurality of convex structures, and the upper transparent electrode directly contacts and covers the convex structures on the surface of each of the color filters, wherein a surface of the transparent electrode opposite to the color filters is planar.

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Examiner wonders how to achieve the surface of the transparent electrode opposite to the color filter is planar because it seems that usually, when applying the electrode layer (by sputtering for instance) directly on another layer, which has irregular shape (with plurality of convex structure on color filter in this particular invention), the electrode layer will have the same irregular shape as the layer that the electrode directly forms on.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 20, 22-24, 26-28, 31-34 & 36-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Wachi U.S. Patent No. 6,819,375.

Regarding claim 20, Wachi discloses a liquid crystal display comprising a lower substrate (20); an upper substrate (10) positioned parallel with the lower substrate; and a plurality of pixel units, each of the pixel units including an upper transparent electrode (11), a liquid crystal layer (40), a lower transparent electrode (24), and a color filter (17) formed on the upper substrate and above the lower substrate; wherein surface of each color filter has a plurality of convex structures, and the upper transparent electrode directly contacts and covers the

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convex structures on the surface of each of the color filters, [see figs. 12 & 1-3; col. 13, lines 22-25].

Regarding claim 22, Wachi discloses wherein the surface of each color filter has the plurality of convex structures is able to scatter light, [see fig. 3].

Regarding claim 23, Wachi discloses wherein a distribution density of the convex structures is used to regulate brightness and a color deepness of the liquid crystal display, [see fig. 3].

Regarding claims 24, 26-27, Wachi discloses wherein each of the pixel units respectively comprises a reflection layer (21) positioned between the color filter and the lower substrate (20), wherein each of the reflection layers includes an opening (211), and the liquid crystal display being a semi-transmissive and semi-reflective liquid crystal display, [see fig. 12].

Regarding claim 28, Wachi discloses a plurality of thin film transistors for respectively controlling each of the pixel units, [col. 15, lines 61-63].

Regarding claim 31, Wachi discloses a liquid crystal comprising a lower substrate (20); an upper substrate (10) positioned parallel with the lower substrate; and a plurality of pixel units, a lower transparent electrode (24), and a color filter (17) formed on the upper substrate and above the lower substrate; wherein a surface of each color filter has a plurality of convex structure, and each of the pixel units respectively comprises a reflection layer (21) positioned between the color filter and the lower substrate, [see figs. 12 & 1-3; col. 13, lines 22-25].

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Regarding claim 32, Wachi discloses wherein the color filter is covered with the upper transparent electrode (11) directly, [see figs. 12 & 1-3; col. 13, lines 22-25].

Regarding claim 33, Wachi discloses wherein the surface of each color filter has the plurality of convex structures is able to scatter light, [see fig. 3].

Regarding claim 34, Wachi discloses wherein a distribution density of the convex structures is used to regulate brightness and a color deepness of the liquid crystal display, [see fig. 3].

Regarding claims 36-37, Wachi discloses wherein each of the reflection layers includes an opening (211), and the liquid crystal display being a semi-transmissive and semi-reflective liquid crystal display.

Regarding claim 38, Wachi discloses a plurality of thin film transistors for respectively controlling each of the pixel units, [col. 15, lines 61-63].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25, 29, 35 & 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wachi.

Regarding claims 29 & 39, even though Wachi lacks disclosure of wherein the thin film transistors are formed on the lower substrate, it has been

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determined that the arrangement of parts is within the ordinary level of skill, [MPEP 2144.04 VI (C) Rearrangement of Parts]. Further, rearranging the thin film transistors from upper substrate to lower substrate (corresponding to pixel electrodes) will not change the function the thin film transistors, and therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the thin film transistors formed on the lower substrate for controlling the pixel units in the display.

Regarding claims 25 & 35, Wachi discloses a reflection layer (21) form between the color filter and the lower substrate. However, since the reflection layer (21) has the opening (211), the display functions as a transflective display (as rejected in claims 26, 27, 36, 37). In order to have a reflective display, with Wachi's structure, the reflection layer (21) should not have any opening, in other words, the reflection layer should cover entire the lower substrate, and it would have been obvious to one ordinary skill in the art to achieve.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Matsushita et al U.S. Patent No. 6,501,521 discloses a transflective liquid crystal display comprising color filters wherein the surface of the color filters having concave-convex shape. However, there is an overcoat layer formed on the surface of the color filters.

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Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to (Nancy) Thanh-Nhan P. Nguyen whose telephone number is 571-272-1673. The examiner can normally be reached on M-F/9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

(Nancy) Thanh-Nhan P Nguyen
Examiner
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-- November 25, 2005 --




ANDREW SCHECHTER
PRIMARY EXAMINER